

What is claimed is:

1. A method for increasing track density of a disc drive, the disc drive having a read transducer and a write transducer for a first disc surface wherein the write transducer produces a wider written-to track width than a read-from track width of the read transducer, the method comprising steps of:

(a) writing onto the first disc surface with the write transducer a first plurality of adjacent tracks having a track-to-track spacing substantially equal to the read-from track width of the read transducer; and

(b) reading with the read transducer the first plurality of adjacent tracks.

2. The method of claim 1, further comprising a step of:

(c) writing with the write transducer a second plurality of adjacent tracks having a track-to-track spacing substantially equal to (the written-to track width of the write transducer) + (the read-from track width of the read transducer)/2; and

(d) reading with the read transducer the second plurality of adjacent tracks.

3. The method of claim 1 wherein writing step (a) further comprises (a)(i) moving the write transducer in a single direction when writing to an adjacent track.

4. The method of claim 1 wherein the write transducer has a first edge and a second edge, wherein writing step (a) further comprises

(a)(i) moving the write transducer in a single direction when writing to an adjacent track, wherein the first edge of the write transducer is moved to a position substantially equal to the track width.

5. The method of claim 1 wherein writing step (a) further comprises

(a)(i) writing a sequential record to a selected number of a plurality of adjacent tracks while moving the write transducer in a single direction between writing to adjacent tracks; and

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- (a)(ii) placing a guard band after the selected number of a plurality of adjacent tracks.
6. The method of claim 6 wherein the placing step (a)(ii) includes placing a guard band having a width of at least one writer width.
7. A disc drive comprising:
a rotating disc assembly having a first disc surface;
a read transducer operating in a transducing relationship to the first disc surface;
a write transducer operating in a transducing relationship to the first disc surface, wherein the write transducer as it writes produces a wider written-to track width than a read-from track width of the read transducer; and
a first plurality of adjacent tracks on the first disc surface having a track-to-track spacing substantially equal to the read-from track width of the read transducer.
8. The disc drive of claim 7, further comprising a second plurality of adjacent tracks on the first disc surface having a track-to-track spacing substantially equal to $(\text{the written-to track width of the write transducer}) + (\text{the read-from track width of the read transducer})/2$.
9. A magnetic disc storage system comprising the disc drive of claim 7, and further comprising:
an information processing system;
a memory system operatively coupled to the information processing system;
an input/output system operatively coupled to the information processing system; and
a data channel that operatively coupled the information processing system to the disc drive.

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10. The disc drive of claim 7 wherein the first plurality of adjacent tracks on the first disc surface having a track-to-track spacing substantially equal to the read-from track width of the read transducer.

11. The disc drive of claim 7 wherein the write transducer has a first edge and a second edge, wherein the first plurality of adjacent tracks is produced by moving the write transducer in a single direction when writing to an adjacent track, wherein the first edge of the write transducer is moved to a position substantially equal to the track width after writing a track and before writing a subsequent track.

12. The disc drive of claim 7 wherein the write transducer writes a first sequential record to a selected number of a first plurality of adjacent tracks, and writes a second sequential record to a selected number of a first plurality of adjacent tracks, and places a guard band between the first sequential record and the second sequential record.

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13. A magnetic disc storage system, comprising:
a disc drive that includes:

a magnetic disc assembly having a first recording surface;
a write transducer positioned proximate to the first recording surface of the magnetic disc for writing information on the first recording surface;

a read transducer positioned proximate to the first recording surface of the magnetic disc for reading information from the first recording surface;

a controller within the disc storage system and coupled to the read and write transducers, wherein the controller positions a center of the write transducer over a target track at a write offset relative to a servo position and the controller positions a center of the read transducer over a target track at a read offset relative to a servo position, and wherein the read offset is different than the write offset.

14. The magnetic disc storage system of claim 13, wherein the disc drive further includes:

a memory within the disc drive and coupled to the controller, where the memory contains a read offset value relative to a servo position of the target track that is different than a write offset value relative to the servo position of the target track.

15. The magnetic disc storage system of claim 13, further comprising:

an information processing system;

a memory system operatively coupled to the information processing system;

an input/output system operatively coupled to the information processing system; and

a data channel that operatively couples the information processing system to the disc drive.

16. The magnetic disc storage system of claim 13, wherein the controller offsets the write transducer from a centerline of the track during the write operation.

17. The magnetic disc storage system of claim 13, wherein the controller moves the write transducer in a single direction when writing to the disc, and the controller offsets the write transducer from a centerline of the track during the write operation.

18. The magnetic disc storage system of claim 17, wherein the controller offsets the write transducer from a centerline of the track during the write operation to a position where one edge of the write transducer is positioned substantially at the track edge of the previously written track.

19. The magnetic disc storage system of claim 13 wherein the controller writes a first sequential record to a first data band having a selected number of tracks; and

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writes a second sequential record to a second data band having a selected number of tracks.

20. The magnetic disc storage system of claim 19 wherein the controller leaves a guard band between the first data band and the second data band.

21. The magnetic disc storage system of claim 13 wherein the controller recognizes a data placed in a format of a sequential record.

22. A disc drive comprising:

a disc having a first recording surface;

a write transducer positioned proximate to the first recording surface of the magnetic disc for writing information on the first recording surface;

a read transducer positioned proximate to the first recording surface of the magnetic disc for reading information from the first recording surface; and

means for increasing track density of the disc drive.

23. The disc drive of claim 20 wherein the means for increasing track density includes a controller coupled to the read and write transducers, wherein the controller positions a center of the write transducer over a target track at a write offset relative to a servo position and the controller positions a center of the read transducer over a target track at a read offset relative to a servo position, and wherein the read offset is different than the write offset.

24. The magnetic disc drive of claim 23, wherein the disc drive further includes a memory coupled to the controller, where the memory contains a read offset value relative to a servo position of the target track that is different than a write offset value relative to the servo position of the target track.

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